AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A heat exchanger for a deep fryer system, the heat exchanger being within a vat containing shortening, the heat exchanger comprising, in combination:

at least one heat transfer conduit having a heating fluid passing therethrough;

a baffle plate disposed within the at least one heat transfer conduit, defining a plane and having a first surface, an opposed second surface, and a longitudinal axis which divides the baffle plate into a first portion and a second portion;

a plurality of tabs, each tab comprised of a portion of the baffle plate which is cut from the baffle plate and bent away from one of the first and second surfaces, the tab leaving a hole in the baffle plate and having a longitudinal axis and extending outwardly away from one of the first and second surfaces of the baffle plate, an intersection of the tab and the baffle plate defining a crease, a plurality of the tabs being positioned in the first portion of the baffle plate and a plurality of the tabs being positioned in the second portion of the baffle plate, a plurality of the tabs extending outwardly from the first surface and a plurality of the tabs extending outwardly from the second surface;

a plurality of webs, each web separating a tab from another tab adjacent the tab in a direction substantially perpendicular to the longitudinal axis of the tab.

2. (Cancelled).

3. (Cancelled).

4. (Cancelled).

5. (Cancelled).

6. (Previously presented) A heat exchanger according to claim 1, wherein the crease of the plurality of tabs forms an acute angle with the longitudinal axis of the baffle plate.

7. (Original) A heat exchanger according to claim 1, wherein the crease of at least one tab forms an acute angle with a portion of a longitudinal edge of the baffle plate which is downstream of the crease of the at least one tab, and the crease of at least one other tab forms an acute angle with a portion of the longitudinal edge of the baffle plate which is upstream of the crease of the at least one other tab.

8. (Previously presented) A heat exchanger according to claim 1, wherein the tabs are arranged in a plurality of rows, each row extending in a direction substantially perpendicular to the longitudinal axis of the baffle plate, each row having at least three tabs and the rows alternate between having the crease of each tab in a row form an acute angle with a portion of a longitudinal edge of the baffle plate which is downstream, with respect to the flow of heating fluid, of the row and having the crease of each tab in a row form an acute angle with a portion of the longitudinal edge of the baffle plate which is upstream, with respect to the flow of heating fluid, of the row.

9. (Previously presented) A heat exchanger according to claim 1, wherein at least one row having the crease of each tab in that row form an acute angle with a portion of a longitudinal edge of the baffle plate which is downstream, with respect to the flow of heating fluid, of that row is separated from at least one other row having the crease of each tab in that other row form an acute angle with a portion of the longitudinal edge of the baffle plate which is upstream, with respect to the flow of heating fluid, of that row by a separate row having the crease of each tab in that separate row form a right angle with the longitudinal edge of the baffle plate.

10. (Previously presented) A heat exchanger according to claim 1, wherein the crease of at least one tab is positioned directly downstream, with respect to the flow of heating fluid, of the web between two tabs which are adjacent and upstream of the at least one tab.

11. (Currently Amended) A heat exchanger according to claim 1, wherein the crease of each tab is upstream, with respect to the flow of heating fluid, of a main body of [the] each tab.

12. (Previously presented) A heat exchanger according to claim 1, wherein the crease of each tab is downstream, with respect to the flow of heating fluid, of a main body of the each tab.

13. (Previously presented) A heat exchanger according to claim 1, wherein the crease of at least one tab is downstream, with respect to the flow of heating fluid, of a main body of the at least one tab and the crease of at least one other tab is upstream, with respect to the flow of heating fluid, of the main body of the at least one other tab.

14. (Original) A heat exchanger according to claim 1, wherein each of the tabs comprises a portion of the baffle plate which is bent outwardly away from one of the first and second surfaces.

15. (Original) A heat exchanger according to claim 1, further comprising at least one additional baffle plate disposed in the at least one heat transfer conduit.

16. (Original) A heat exchanger according to claim 15, wherein the at least one additional baffle plate has a different configuration of tabs than at least one other baffle plate.

17. (Original) A heat exchanger according to claim 15, wherein the at least one additional baffle plate has a different number of tabs than at least one other baffle plate.

18. (Original) A heat exchanger according to claim 15, further comprising a perimeter plate defining a plane and positioned between an inside surface of the at least one heat transfer conduit and the baffle plates.

19. (Original) A heat exchanger according to claim 18, wherein the plane of the perimeter plate is substantially perpendicular to the planes of the baffle plates.

20. (Previously presented) A heat exchanger according to claim 1, wherein a portion of the baffle plate has a greater number of tabs than an equally sized portion of the baffle plate which is upstream, with respect to the flow of heating fluid, of the portion of the baffle plate.

21. (Previously presented) A heat exchanger according to claim 1, wherein the number of tabs per unit length increases along the baffle plate in a downstream direction with respect to the flow of heating fluid.

22. (Original) A heat exchanger according to claim 1, further comprising a perimeter plate defining a plane and positioned between an inside surface of the at least one heat transfer conduit and the baffle plate.

23. (Original) A heat exchanger according to claim 22, wherein the plane of the perimeter plate is substantially perpendicular to the plane of the baffle plate.

24. (Original) A heat exchanger according to claim 1, wherein the longitudinal axis of the baffle plate extends substantially parallel to a longitudinal axis of the at least one heat transfer conduit.

25. (Previously presented) A baffle for a heat exchanger in a deep fryer, the heat exchanger having at least one heat transfer conduit with heating fluid passing therethrough, comprising, in combination:

a baffle plate positioned within the at least one heat transfer conduit defining a plane and having a first surface, an opposed second surface, and a longitudinal axis which divides the baffle plate into a first portion and a second portion;

a plurality of rows of tabs, each tab comprising a portion of the baffle plate bent outwardly from one of the first and second surfaces, having a longitudinal axis, and defining a crease along an intersection of the tab and the baffle plate, at least one tab in each row being positioned in the first portion of the baffle plate, at least one tab in each row being positioned in the second portion of the

baffle plate, each row having the crease of all of its tabs form an acute angle with one of a portion of a longitudinal edge of the baffle plate which is upstream, with respect to the flow of heating fluid, of a main body of its respective tab and a portion of the longitudinal edge which is downstream, with respect to the flow of heating fluid, of the main body of its respective tab and the rows adjacent to the each row having the crease of all of their tabs form an acute angle with the other of a portion of the longitudinal edge which is upstream, with respect to the flow of heating fluid, of the main body of its respective tab and a portion of the longitudinal edge which is downstream, with respect to the flow of heating fluid, of the main body of its respective tab; and

a plurality of webs, each web separating a tab from another tab adjacent the tab in a direction substantially perpendicular to the longitudinal axis of the tab, the crease of at least one tab being directly downstream, with respect to the flow of heating fluid, of the web between two other tabs which are adjacent and upstream, with respect to the flow of heating fluid, of the at least one tab;

wherein the number of tabs per unit length increases along the baffle plate in a downstream direction with respect to the flow of heating fluid.

26. (Previously presented) A heat exchanger for a deep fryer system having a gas burner to heat fluid flowing through the heat exchanger, the heat exchanger being within a vat containing shortening, the heat exchanger comprising, in combination:

at least one heat transfer conduit having heating fluid passing therethrough;

a baffle plate disposed within the at least one heat transfer conduit defining a plane and having a first surface, an opposed second surface, and a longitudinal axis which divides the baffle plate into a first portion and a second portion;

a plurality of tabs, each tab having a longitudinal axis and extending outwardly away from one of the first and second surfaces of the baffle plate, an intersection of the tab and the baffle plate

defining a crease, the crease being created by bending the tab from the baffle plate, at least one of the tabs being positioned in the first portion of the baffle plate and at least one of the tabs being positioned in the second portion of the baffle plate;

the baffle plate being positioned within the heat transfer conduit and the tabs having a length and an angle which position the tabs relative to the heat transfer conduit so the tabs do not contact the heat transfer conduit and do not prevent the heating fluid from flowing between the tabs and those portions of the heat transfer conduit most closely adjacent to each of the tabs;

the tabs being comprised of a portion of the baffle plate which is cut from the baffle plate and bent away from one of the first and second surfaces, each of the tabs leaving a hole in the baffle plate;

at least a portion of a side of each hole comprised of the crease of the tab which was cut and bent from the baffle plate to leave the hole, the tab and the hole which share a crease defining a tab/hole pair;

a plurality of webs, each web separating a first tab/hole pair from a second tab/hole pair which is adjacent to the first tab/hole pair in a direction substantially perpendicular to the longitudinal axis of the tab;

a plurality of the tabs being bent outwardly away from the first surface and a plurality of the tabs being bent outwardly away from the second surface;

a plurality of rows of tab/hole pairs, each row extending in a direction substantially perpendicular to the longitudinal axis of the baffle plate and having at least three tab/hole pairs, each of the tab/hole pairs in each row being separated from each adjacent tab/hole pair in the row by a web;

there being at least two webs in each row of tab/hole pairs, the webs in each row of the tab/hole pairs comprising a row of webs extending in a direction substantially perpendicular to the longitudinal axis of the baffle plate;

a plurality of rows of webs;

a plurality of rows of tab/hole pairs, which rows each have at least one tab/hole pair positioned in the first portion of the baffle plate and at least one tab/hole pair positioned in the second position of the baffle plate;

a plurality of rows of tab/hole pairs, each row of table/hole pairs having at least one tab extending outwardly away from the first surface of the baffle plate and at least one tab extending outwardly away from the second surface of the baffle plates;

the baffle plate being positioned within the heat transfer conduit and shaped so that the tabs are capable of deflecting the heating fluid so that the heating fluid is capable of flowing (1) through the holes, (2) between the tabs, (3) adjacent to the webs and (4) between the tabs and the heat transfer conduit so the baffle plate, tabs, and holes are capable of collectively causing increased turbulence of the heating fluid passing through the heat transfer conduit, the increased turbulence improving heat transfer from the heating fluid within the heat transfer conduit to the shortening within the vat of the deep fryer system as compared to a similar heat exchanger for a deep fryer system which does not utilize a baffle plate.

27. (Previously presented) A heat exchanger according to Claim 26 wherein a plurality of tabs are positioned directly upstream, with respect to the flow of heating fluid, of the web between two tabs which are adjacent to each other and downstream of the plurality of tabs; and

a plurality of tabs are positioned directly downstream, with respect to the flow of heating fluid, of the web between two tabs which are adjacent and downstream of the plurality of tabs.

28. (Original) A heat exchanger according to Claim 26 wherein a plurality of the webs are positioned in a straight line, one behind another, in the direction of the longitudinal axis of the baffle plate.

29. (Currently Amended) A heat exchanger for a deep fryer system having a gas burner to heat fluid flowing through the heat exchanger, the heat exchanger being contained within a vat containing shortening, the heat exchanger comprising, in combination:

at least one heat transfer conduit having heating fluid passing therethrough;

a baffle plate disposed within the at least one heat transfer conduit defining a plane and having a first surface, an opposed second surface, and a longitudinal axis which divides the baffle plate into a first portion and a second portion;

a plurality of tabs, each tab having a longitudinal axis and extending outwardly away from one of the first and second surfaces of the baffle plate, an intersection of the tab and the baffle plate defining a crease, the crease being created by bending the tab from the baffle plate, at least one of the tabs being positioned in the first portion of the baffle plate and at least one of the tabs being positioned in the second portion of the baffle plate;

the baffle plate being positioned within the heat transfer conduit and the tabs having a length and an angle which position the tabs relative to the heat transfer conduit so the tabs do not contact the heat transfer conduit and do not prevent the heating fluid from flowing between the tabs and the portions of the heat transfer conduit most closely adjacent to each of the tabs;

the tabs being comprised of a portion of the baffle plate which is cut from the baffle plate and bent away from one of the first and second surfaces, each of the tabs leaving a hole in the baffle plate;

at least a portion of a side of each hole comprised of the crease of the tab which was cut and bent from the baffle plate to leave the hole, the tab and the hole which share a crease defining a tab/hole pair;

a plurality of webs, each web separating a first tab/hole pair from a second tab/hole pair which is adjacent to the first tab/hole pair in a direction substantially perpendicular to the longitudinal axis of the tab;

a plurality of the tabs being bent outwardly away from the first surface and a plurality of the tabs being bent outwardly away from the second surface;

at least [six] <u>five</u> rows of tab/hole pairs, each row extending in a direction substantially perpendicular to the longitudinal axis of the baffle plate and having at least four tab/hole pairs and at least three webs, each of the tab/hole pairs in each row being separated from each adjacent tab/hole pair in the row by a web;

a plurality of rows of tab/hole pairs, which rows each have a tab/hole pair positioned in the first portion of the baffle plate and a tab/hole pair positioned in the second position of the baffle plate;

a plurality of rows of tab/hole pairs, which rows have a tab extending outwardly away from the first surface of the baffle plate and a tab extending outwardly away from the second surface of the baffle plates;

the tab/hole pairs being arranged on the baffle plate so that an equal number of tabs are on either side of the center line of the first surface of the baffle plate and the tab/ hole pairs are arranged on the first surface of the baffle plate symmetrically about the center line of the baffle plate and so an equal number of tabs are on either side of the center line of the second surface of the baffle plate and

the tab/hole pairs are arranged on the second surface of the baffle plate symmetrically about the center line of the baffle plate;

the baffle plate is positioned and shaped so that the tabs are capable of deflecting the heating fluid so that the heating fluid is capable of flowing (1) through the holes, (2) between the tabs, (3) adjacent the webs and (4) between the tabs and the heat transfer conduit so the baffle plate, tabs, holes and webs are capable of collectively causing increased turbulence of the heating fluid passing through the heat transfer conduit, the increased turbulence improving heat transfer from the heating fluid within the heat transfer conduit to the shortening within the vat of the deep fryer system as compared to a similar heat exchanger for a deep fryer system which does not utilize a baffle plate.

30. (Previously presented) The heat exchanger of Claim 29 wherein at least a portion of the webs are positioned directly upstream, with respect to the flow of heating fluid, of a tab located in an immediately downstream row of tabs and at least a portion of the webs are positioned directly downstream of a tab located in an immediately upstream row of tabs.

31. (Original) A heat exchanger according to Claim 29 wherein a plurality of the webs are in a straight line, one behind another, in the direction of the longitudinal axis of the baffle plate.

32. (Previously presented) A heat exchanger for a deep fryer system comprising, in combination:

at least one heat transfer conduit for heating fluid to pass therethrough;

a baffle plate disposed within the at least one heat transfer conduit, defining a plane and having a first surface, an opposed second surface, and a longitudinal axis which divides the baffle plate into a first portion and a second portion;

a plurality of tabs, each tab having a longitudinal axis and extending outwardly away from one of the first and second surfaces of the baffle plate, an intersection of the tab and the baffle plate

defining a crease, at least one of the tabs being positioned in the first portion of the baffle plate and at least one of the tabs being positioned in the second portion of the baffle plate;

substantially all of the tabs being separated from adjacent tabs by a web, each web separating a tab from another tab adjacent the tab in a direction substantially perpendicular to the longitudinal axis of the tab;

each of the tabs comprises a portion of the baffle plate which is bent outwardly away from one of the first and second surfaces;

each tab being positioned adjacent to a corresponding hole in the baffle plate;

the heating fluid being capable of flowing through the hole created in the baffle plate by bending said tab out of the baffle plate;

a plurality of rows of tabs, each of which rows has a tab positioned in the first portion of the baffle plate and a tab positioned in the second position of the baffle plate;

a plurality of rows of tabs, each of which rows has a tab extending outwardly away from the first surface of the baffle plate and a tab extending outwardly away from the second surface of the baffle plates;

a majority of the tab/hole pairs created by bending the tab from the baffle plate leaving a hole in the baffle plate are positioned in a plurality of rows of tab/hole pairs tabs, each row of tab/hole pairs extending in a direction substantially perpendicular to the longitudinal axis of the baffle plate;

each row of tab/hole pairs has a tab positioned in the first portion of the baffle plate and a tab positioned in the second position of the baffle plate;

each row of tab/hole pairs has a tab extending outwardly away from the first surface of the baffle plate and a tab extending outwardly away from the second surface of the baffle plate;

a plurality of the rows of tabs have at least three tabs, a first tab positioned above the plane of the baffle plate, a second adjacent tab separated from the first tab by a web and positioned below the plane of the baffle plate, and a third tab, separated by a web from the second tab and positioned above the plane of the baffle plate; and

the tabs are located, and shaped so the tabs are capable of deflecting the heating fluid and the heating fluid is flowable (1) through the holes, (2) between the tabs and (3) between the tabs and the heat transfer conduit so the baffle plate, tabs, and holes are capable of collectively causing increased turbulence of the heating fluid passing through the heat transfer conduit to improve heat transfer from the heating fluid through the heat transfer conduit to the shortening within the vat of the deep fryer system as compared to a heat exchanger for a deep fryer system which does not utilize a baffle plate.

33. (Previously presented) A heat exchanger according to Claim 32, wherein each tab extends outwardly at an acute angle with respect to the surface of the baffle plate from its crease and each tab being capable of deflecting the heating fluid through its corresponding hole in the baffle plate and outwardly away from the baffle plate.

34. (Original) A heat exchanger according to Claim 32, wherein an approximately equal number of tabs are on either side of the longitudinal axis of the baffle plate and the tabs are arranged on the baffle plate generally symmetrically about the longitudinal axis of the baffle plate.

35. (Original) A heat exchanger according to Claim 32 wherein the heat exchanger has a plurality of heat transfer conduits located within the vat containing shortening.

36. (Original) A heat exchanger according to Claim 32, additionally comprising at least six rows of tabs on the baffle plate, including at least three tabs per row.

37. (Previously presented) A baffle for a heat exchanger in a deep fryer, the heat exchanger having at least one transfer conduit for heating fluid to pass therethrough, comprising, in combination:

a baffle plate positioned within the at least one heat transfer conduit defining a plane and having a first surface, and an opposed second surface and a longitudinal axis which divides the baffle plate into a first portion and a second portion;

a plurality of rows of tabs, at least three tabs in most of the rows of tabs, each tab comprising a portion of the baffle plate that is bent outwardly from one of the first and second surfaces and leaving a hole in the baffle plate, having a longitudinal axis, and defining a crease along an intersection of the tab and the baffle plate, at least one tab in each row being positioned in the first portion of the baffle plate, at least one tab in each row being positioned in the second portion of the baffle plate;

at least a portion of a side of each hole comprises the crease of the tab the hole is adjacent to, the tab extending outwardly from the baffle plate over at least part of the adjacent hole, the tab and the hole which share a crease defining a tab/hole pair;

a plurality of adjacent tabs being separated from each other by a web;

a plurality of rows of webs, at least two webs in most of the rows of webs, each web separating a tab from another adjacent tab in a direction substantially perpendicular to the longitudinal axis of the baffle plate; the tabs and webs are positioned upon the baffle plate and shaped so the tabs are capable of deflecting the heating fluid and the heating fluid is flowable between the tabs and adjacent to the webs;

and wherein the tabs are positioned and shaped so the tabs are capable of deflecting the heating fluid and the heating fluid is flowable (1) through the holes, (2) between the tabs and (3)

between the tabs and the heat transfer conduit so the baffle plate, tabs, and holes are capable of collectively causing increased turbulence of the heating fluid passing through the heat transfer conduit to improve heat transfer from the heating fluid through the heat transfer conduit to the shortening within the vat of the deep fryer system as compared to a heat exchanger for a deep fryer system which does not have a baffle plate.

38. (Previously presented) The heat exchanger of Claim 37, wherein the crease of a plurality of tabs in each row of tabs is directly downstream, with respect to the flow of the heating fluid, of the creases of the tabs in the rows of tabs directly upstream and directly upstream of the creases of the tabs in the row of tabs directly downstream.

39. (Original) A heat exchanger according to Claim 37 wherein each row of tab/hole pairs has a tab extending outwardly away from the first surface of the baffle plate and a tab extending outwardly away from the second surface of the baffle plate.

40. (Original) A heat exchanger according to Claim 37 wherein an approximately equal number of tabs are on either side of the longitudinal axis of the baffle plate and the tabs are arranged on the baffle plate generally symmetrically about the longitudinal axis of the baffle plate.

41. (Original) A heat exchanger according to Claim 37, additionally comprising at least six rows of tabs on the baffle plate including at least three tabs per row.

42. (Previously presented) A deep fryer system having a heat exchanger and a burner to heat air flowing through the heat exchanger, the heat exchanger being within the deep fryer system's vat containing shortening, the heat exchanger portion of the deep fat fryer system comprising:

at least one heat transfer conduit having heating fluid passing therethrough;

a baffle plate disposed within the at least one heat transfer conduit defining a plane and having a first surface, an opposed second surface, and a longitudinal axis which divides the baffle plate into a first portion and a second portion;

a plurality of tabs, each tab having a longitudinal axis and extending outwardly away from one of the first and second surfaces of the baffle plate, an intersection of the tab and the baffle plate defining a crease, the crease being created by bending the tab from the baffle plate, at least one of the tabs being positioned in the first portion of the baffle plate and at least one of the tabs being positioned in the second portion of the baffle plate;

the tabs being comprised of a portion of the baffle plate which is cut from the baffle plate and bent away from one of the first and second surfaces, each of the tabs leaving a hole in the baffle plate;

at least a portion of a side of each hole is comprised of the crease of the tab which was cut and bent from the baffle plate to leave the hole, the tab and the hole which share a crease defining a tab/hole pair;

a plurality of webs, each web separating a first tab/hole pair from a second tab/hole pair which is adjacent to the first tab/hole pair in a direction substantially perpendicular to the longitudinal axis of the tab;

a plurality of the tabs being bent outwardly away from the first surface and a plurality of the tabs being bent outwardly away from the second surface;

a plurality of rows of tab/hole pairs, each row extending in a direction substantially perpendicular to the longitudinal axis of the baffle plate and having at least three tab/hole pairs, each of the tab/hole pairs in each row being separated from each adjacent tab/hole pair in the row by a web;

there being at least two webs in each row of tab/hole pairs, the webs in each row of the tab/hole pairs comprising a row of webs extending in a direction substantially perpendicular to the longitudinal axis of the baffle plate;

a plurality of rows of webs, at least two webs in most of the rows of webs, each web separating a tab from another adjacent tab in a direction substantially perpendicular to the longitudinal axis of the baffle plate; the tabs and webs are positioned and shaped so the tabs are capable of deflecting the heating fluid and the heating fluid is flowable between the tabs and adjacent to the webs;

a plurality of rows of tab/hole pairs, which rows each have at least one tab/hole pair positioned in the first portion of the baffle plate and at least one tab/hole pair positioned in the second position of the baffle plate;

a plurality of rows of tab/hole pairs; which rows have at least one tab extending outwardly away from the first surface of the baffle plate and at least one tab extending outwardly away from the second surface of the baffle plate;

a plurality of webs arranged in a straight line, one behind the other, in the direction of the longitudinal axis of the baffle plate;

wherein the crease of a plurality of tabs in each row of tabs being directly downstream with respect to the flow of the heating fluid of the creases of the tabs in the rows of tabs directly upstream and being directly upstream of the creases of the tabs in the row of tabs directly downstream; and

the baffle plate with its tab/hole pairs and webs is positioned within the conduit and shaped so that the tabs are capable of deflecting the heating fluid and the heating fluid is flowable (1) through the holes, (2) between the tabs, (3) adjacent to the webs and (4) between the tabs and the heat transfer conduit so the baffle plate, tabs, and holes are capable of collectively causing increased

turbulence in the heating fluid passing through the heat transfer conduit to improve heat transfer from the heating fluid through the heat transfer conduit to the shortening within the vat of the deep fryer system as compared to a similar heat exchanger for a deep fryer system which does not utilize a baffle plate.

43. (Previously presented) A heat tube baffle for a deep fat fryer wherein the fryer includes an oil tank for cooking food with at least one heat tube extending therethrough in heat exchange relationship with said tank wherein cooking oil in said tank is heated by said tube and wherein a burner generates products of combustion which flow through said tube from an entrance to an exit, said baffle comprising:

an elongated, rectangular metal plate having opposed faces, the plate disposed within the tube and extending within the tube, the plate having a plurality of mutually spaced tabs struck thereof, in mutually spaced rows and extending at an acute angle to the plate along the length thereof, each of the tabs in each row extending outwardly toward an adjacent tube wall and directed upstream of the flow, each struck tab leaving a corresponding hole in the plate whereby products of combustion in the flow are directed through the hole by the tab.